



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/739,790	12/20/2000	Hiroshi Suginoshita	520.39413X00	3843

20457 7590 09/09/2004

ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-9889

EXAMINER

MAHMOUDI, HASSAN

ART UNIT

PAPER NUMBER

2175

DATE MAILED: 09/09/2004

19

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/739,790	SUGINOSHITA ET AL.	
	Examiner Tony Mahmoudi	Art Unit 2175	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 2.0.  
9/3/04
- 1) Responsive to communication(s) filed on 10 May 2004, and G/9/04 .
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



DOV POPOVICI

SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's Request for Continued Examination (RCE) submission filed on 09-June-2004 has been entered. In addition, the "After Final" amendment filed on 10-May-2004 has been entered for the continued examination of this application.

### *Remarks*

2. In response to communications filed on 10-May-2004, claims 1-2, 4-6, and 8-11 are amended per applicant's request. Claims 1-11 are presently pending in the application.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Art Unit: 2175

4. Claims 1-2 and 4-6, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama (U.S. Patent No. 6,374,262) in view of Nakai et al (U. S. Patent No. 5,954,803), and further in view of Mullen (U.S. Patent No. 6,272,544.)

As to claim 1, Kodama teaches a database system (see Abstract, and see column 3, lines 16-17) comprising:

- a master database to be updated (see column 5, lines 15-22);
- a replica for storing a duplicate of the master database (see column 5, lines 35-40);
- an allocation unit for reading the update data and extracting the update data according to the preferential order information (see Abstract, and see column 2, lines 51-54); and
- a management unit for updating the replica with the update data in the extracted order (see column 2, lines 63-66, where “updating the replica” is read on “transferring to the replica machine”.)

Kodama does not teach:

a preferential order information memory unit for holding preferential order information indicating a preferred order of updating one of a specific database table to update data of the master database on the replica; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches a preferential order information memory unit for holding preferential order information (see column 5, lines 41-43) indicating a preferred order of updating a specific database table to update data of the master database on the replica (see column 5, lines 43-46); in such manner that

Art Unit: 2175

the update data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include a preferential order information memory unit for holding preferential order information indicating a preferred order of updating a specific database or a part thereof of update data of the master database on the replica; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because a preferential order information memory unit for holding preferential order information indicating a preferred order of updating a specific database or a part thereof of update data of the master database on the replica; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified still does not teach either one of preferential table columns and preferential keys of a column.

Art Unit: 2175

Mullen teaches a facility for ranking service classes (see Abstract), in which he teaches preferential table columns (see figure 7, and see column 7, lines 52-64) and preferential keys of a column (see figure 8, and see column 7, lines 46-52, where “keys of a column” is read on “service class” and “service level goals”.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama as modified, to include either one of preferential table columns and preferential keys of a column.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama as modified, by the teachings of Mullen, because including either one of preferential table columns and preferential keys of a column, would enhance the priority/preference assignment of a preferential order to be able to prioritize (assign preferences) to objects based on their class/category as well as based on the preference indicated in their table columns.

As to claim 2, Kodama teaches a database system (see Abstract, and see column 3, lines 16-17) comprising:

a master database to be updated (see column 5, lines 15-22);  
a replica for storing a duplicate of the master database (see column 5, lines 35-40);  
an allocation unit for reading the update data and extracting the update data according to the preferential order information (see Abstract, and see column 2, lines 51-54); and

a management unit for updating the replica with the update data in the extracted order (see column 2, lines 63-66, where “updating the replica” is read on “transferring to the replica machine”.)

Kodama does not teach:

a preferential order acquiring unit for receiving preferential order information indicating a preferred order of updating the master database to be applied when update data of the master database is reflected on the replica and for acquiring the preferential order information; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches a preferential order acquiring unit for receiving preferential order information (see column 7, line 64 through column 8, line 3, and see column 22, lines 16-60) indicating a preferred order of updating a specific database or a part thereof to be applied when update data of the master database is reflected on the replica and for acquiring the preferential order information (see column 5, lines 43-46); in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include a preferential order acquiring unit for receiving preferential order information indicating a preferred order of updating a specific database or a part thereof to be applied when update data of the master database is reflected on the replica and for acquiring the preferential order information; in such manner that the update

Art Unit: 2175

data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because a preferential order acquiring unit for receiving preferential order information indicating a preferred order of updating a specific database or a part thereof to be applied when update data of the master database is reflected on the replica and for acquiring the preferential order information; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified still does not teach preferential table columns. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 4, Kodama teaches a database system (see Abstract, and see column 3, lines 16-17) comprising:

a master database to be updated (see column 5, lines 15-22);

a replica for storing a duplicate of the master database (see column 5, lines 35-40);

a first control unit, provided in the master database side, for extracting update data (see Abstract, and see column 2, lines 51-54) and for transferring the update data to a communication means (see figure 1, and see column 3, lines 59-67); and

a second control unit, provided in the replica side, for receiving the update data transferred from the communication means, for extracting from the update data according to stored preferential order information to be updated, and for updating the replica with the update data based on the extracted order (see column 7, lines 53-65.)

Kodama does not teach stored preferential order information indicating a preferred order of the update data to be updated; in such manner that the update data with higher preferential order of the database table is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches stored preferential order information (see column 5, lines 41-43) indicating a preferred order of updating specific data types of the update data to be updated (see column 5, lines 43-46); in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include stored preferential order information indicating a preferred order of updating specific data types of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because stored

Art Unit: 2175

preferential order information indicating a preferred order of updating specific data types of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified, still does not teach preferential order information of table columns of the database table. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 5, Kodama teaches a database system (see Abstract, and see column 3, lines 16-17) comprising:

- a master database to be updated (see column 5, lines 15-22);
- a replica for storing a duplicate of the master database (see column 5, lines 35-40);
- a first control unit, provided in the master database, for transferring update data (see column 2, line 41 through column 3, line 5) to a communication means (see figure 1, and see column 3, lines 59-67); and
- a second control unit, provided in the replica side, for receiving the update data transferred from the communication means, extracting from the update data (see Abstract, and see column 2,

Art Unit: 2175

lines 51-54, where “selective extraction” is read on “extracting a record with a later update”), and for updating the replica with the update data based on the extracted order data (see column 2, lines 63-66, where “updating the replica” is read on “transferring to the replica machine”.)

Kodama does not teach stored preferential order information indicating a preferred order of updating of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches stored preferential order information (see column 5, lines 41-43) indicating a preferred order of updating specific data types of the update data to be updated (see column 5, lines 43-46); in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include stored preferential order information indicating a preferred order of updating specific data types of the update data to be updated in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because stored preferential order information indicating a preferred order of updating specific data types of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions

of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified still does not teach preferential table columns. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 6, Kodama teaches a database system (see Abstract, and see column 3, lines 16-17) comprising:

- a master database to be updated (see column 5, lines 15-22);
- a plurality of replicas for storing a duplicate of the master database (see figure 2, and see column 4, lines 53-58);
- a first control unit, provided in the master database side, for transferring update data in a selected order (see column 2, line 41 through column 3, line 5); and
- a second control unit, provided in the replica side, for receiving the update data transferred, for extracting from the update data (see Abstract, and see column 2, lines 51-54, where “selective extraction” is read on “extracting a record with a later update”), and for updating the replica with the update data based on the extracted order (see column 2, lines 63-66, where “updating the replica” is read on “transferring to the replica machine”).

Kodama does not teach stored preferential order information indicating a preferred order of updating of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches stored preferential order information (see column 5, lines 41-43) indicating a preferred order of updating specific data types of the update data to be updated (see column 5, lines 43-46); in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include stored preferential order information indicating a preferred order of updating specific data types of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because stored preferential order information indicating a preferred order of updating specific data types of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section

suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified still does not teach preferential keys of a column of a database table. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 8, Kodama teaches a method (see Abstract) for forming a replica of a database in a system having a master database to be updated and a replica thereof (see column 4, lines 53-58), the method comprising steps of:

reading the update data (see column 2, line 41 through column 3, line 5);  
extracting the update data (see Abstract, and see column 2, lines 51-54, where "selective extraction" is read on "extracting a record with a later update");  
updating the replica with the extracted update data (see column 10, lines 18-29.)

Kodama does not teach holding preferential order information indicating a preferred order of updating that are to be applied when update data of the master database is reflected on the replica; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches holding preferential order information (see column 5, lines 41-43) indicating a preferred order of updating of specific data types that are to be applied when update data of the master database is reflected on the replica (see column 5, lines 43-46); in such manner that the update

data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include holding preferential order information indicating a preferred order of updating of specific data types that are to be applied when update data of the master database is reflected on the replica; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because holding preferential order information indicating a preferred order of updating of specific data types that are to be applied when update data of the master database is reflected on the replica; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified still does not teach preferential table columns. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 9, Kodama teaches a method (see Abstract) for forming a replica of a database in a system having a master database to be updated and a replica thereof (see column 4, lines 53-58), the method comprising steps of:

extracting update data (see Abstract, and see column 2, lines 51-54, where “selective extraction” is read on “extracting a record with a later update”);

transferring the extracted update data to a communication means in the extracted order (see column 2, line 41 through column 3, line 5);

receiving the update data transferred from the communication means on the replica side (see column 7, lines 29-52); and

updating the replica thereby (see column 10, lines 18-29); and

extracting update data selectively of further subdivided data types to be updates (see Abstract, and see column 2, lines 51-54, where “selective extraction” is read on “extracting a record with a later update”);

updating a specific database table of the master database (see column 5, lines 35-50.)

Kodama does not teach stored preferential order information indicating a preferred order of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches stored preferential order information (see column 5, lines 41-43) indicating a preferred order of updating specific data types of the update data to be updated (see column 5, lines 43-

46); in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include stored preferential order information indicating a preferred order of updating specific data types of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because stored preferential order information indicating a preferred order of updating specific data types of the update data to be updated; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified still does not teach preferential keys of a column of a database table. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 10, Kodama teaches a method (see Abstract) for forming a replica of a database in a system having a master database to be updated and a replica thereof (see column 4, lines 53-58), the method comprising steps of:

storing of update data of the master database that is to be reflected preferentially according to a preferred order on the replica (see column 2, line 41 through column 3, line 5.)

reading the update data (see column 2, line 41 through column 3, line 5);

extracting the update (see Abstract, and see column 2, lines 51-54, where "selective extraction" is read on "extracting a record with a later update");

updating the replica with the extracted update data (see column 10, lines 18-29.)

Kodama does not teach a preferred order; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches a preferred order (see column 5, lines 41-43); in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order (see column 5, line 46 through column 6, line 3.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include a preferred order; in such manner that the update data with higher preferential order is extracted earlier than the update data with lower preferential order.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because a preferred order; in such manner that the update data with higher preferential order is extracted earlier than

the update data with lower preferential order, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference, meaning that when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first, as taught by Nakai et al (see column 5, lines 46-58.)

Kodama as modified still does not teach preferential keys of a column of a table. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 11, Kodama teaches a computer-readable recording medium (see column 15, line 13) having a recorded program for forming a replica of a master database to be updated (see column 4, lines 53-58), the program comprising (the applicant is kindly directed to remarks and discussions made in claim 8 above.)

5. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama (U.S. Patent No. 6,374,262) in view of Nakai et al (U.S. Patent No. 5,954,803), and further in view of Mullen (U.S. Patent No. 6,272,544), and still further in view of Kawagoe (U.S. Patent No. 6,438,563.)

As to claim 3, Kodama teaches a database system (see Abstract, and see column 3, lines 16-17) comprising:

a master database to be updated (see column 5, lines 15-22);  
a replica for storing a duplicate of the master database (see column 5, lines 35-40);  
an updating unit for receiving update data of the master database and updating the replica (see column 3, line 59 through column 4, line 6) corresponding to the use history (see column 10, lines 19-29, where "specified data type" is read on "negotiation-rated information table exclusive of synchronization information".)

Kodama does not teach: updating with preference based on a preferred order of updating.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches updating with preference based on a preferred order of updating of a specified data type (see column 5, lines 43-46.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include updating with preference based on a preferred order of updating of a specified data type.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because updating with preference based on a preferred order of updating of a specified data type, would enable the system to update the data (or portions of data) between databases selectively, based on the desired order of preference.

Kodama as modified still does not teach order of updating table columns. For this teaching, the applicant is kindly directed to remarks and discussions made in claim 1 above.

Kodama as modified still does not teach a history acquiring unit for recording use history of the replica.

Kawagoe teaches a method for synchronizing databases (see Abstract), in which he teaches a history acquiring unit for recording use history of the replica (see column 3, line 59 through column 4, line 24.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama as modified to include a history acquiring unit for recording use history of the replica.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama as modified, by the teaching of Kawagoe because, a history acquiring unit for recording use history of the replica, would enable the replication system to log all replication information and provide the users with usage log, replicated data type log, and event log, corresponding to the activities of the replicated database.

As to claim 7, Kodama teaches a database system (see Abstract, and see column 3, lines 16-17) comprising:

a master database for storing a plurality of types of data (see figure 2, and see column 4, lines 53-58);

a master database management unit for updating the master database in order of occurrence of an update request according to the data update request to the master database (see column 7, lines 53-65);

an update log file for storing update log of the master database in the order of updating of the master database (see column 12, lines 60-67);

a data allocation unit for extracting update data (see Abstract, and see column 2, lines 51-54, where "selective extraction" is read on "extracting a record with a later update");

a replica for storing the duplicate of data stored in the master database (figure 2); and

a replica database management unit for writing the update data extracted by means of the data allocation unit in the replica in the order of extraction (see column 5, lines 35-40.)

Kodama does not teach: preferential order information indicating a preferred order of updating of the update data in the update log read by the update log reading unit.

Nakai et al teaches a memory-to-memory data transfer system (see Abstract), in which he teaches preferential order information (see column 5, lines 41-43) indicating a preferred order of updating a specific types of the update data in the update log read by the update log reading unit (see column 5, lines 43-46.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama to include preferential order information indicating a preferred order of updating of specific types of the update data in the update log read by the update log reading unit.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama by the teaching of Nakai et al, because preferential order information indicating a preferred order of updating of specific types of the update data in the update log read by the update log reading unit, would enable the system to assign preferences and order to the data being updated and be able to update the data (or portions of data) between databases selectively, based on the desired order of preference.

Kodama as modified still does not teach updating of preferential table columns. For this teaching, the applicant is kindly directed to the remarks and discussions made in claim 1 above.

Kodama as modified still does not teach an update log reading unit for reading out the update log from the log file.

Kawagoe teaches a method for synchronizing databases (see Abstract), in which he teaches a an update log reading unit for reading out the update log from the log file (see column 10, lines 20-31, and see column 20, lines 19-23.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama as modified, to include an update log reading unit for reading out the update log from the log file.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kodama as modified, by the teaching of Kawagoe because, an update log reading unit for reading out the update log from the log file, would enable the replication system to access all replication information and provide the users with usage log, replicated data type log, and event log, corresponding to the activities of the replicated database.

#### *Response to Arguments*

6. Applicant's arguments filed on 10-May-2004 with respect to claims 1-11 have been fully considered but they are not deemed persuasive:

In response to the applicant's arguments that the cited references "fail to teach or suggest extracting the update data according to the preferential order information in such manner that the update data with higher preferential order is extracted earlier than the update with lower preferential order as recited in the claims", the arguments have been fully considered but are not deemed persuasive, because Kodama teaches "extracting the update data according to the preferential order information" (see column 2, lines 51-53, where "extracting according to preferential order" is read on "extracting a record of which a day of last update is later". In this case, the "preferential order" is the time of last update.) Further, as explained in the detail above, Nakai et al teaches extraction based on higher preferential order (see column 5, line 40 through column 6, line 3, where it is taught that "when, during a data-transfer operation using the DMA process, it receives a data-transfer request having a higher order of preference than the current data transfer, the reconciliation section suspends the on-going data-transfer operation and allows the transfer with the higher preference to complete first".)

In response to the applicant's arguments that the cited references "fail to teach or suggest "storing of preferential order information indicating a preferred order of updating either one of a specific database table, preferential table column and preferential keys of a column with respect to update data", the arguments have been fully considered but are not deemed persuasive, because as explained above, the combination of Kodama and Nakai et al teaches updating database tables, and Mullen teaches preferential table columns (see figure 7, and see column 7, lines 52-64) and preferential keys of a column (see figure 8, and see column 7, lines 46-52, where "keys of a column" is read on "service class" and "service level goals".)

*Conclusion*

7. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

tm

August 23, 2004



DOV POPOVICI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100